Appendix F: Mercury Action Descriptions

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General U.S. EPA Efforts

The U.S. EPA has committed FY 2000 funds to support mercury research in a number of priority areas including transport, transformation and fate; and human health and wildlife effects of methylmercury. These research activities are aimed at reducing the uncertainties currently limiting the Agency's ability to assess and manage mercury and methylmercury risks. A particular target of research will be collection and analysis of information on mercury emissions and control options for coal-fired utilities in order to support OAR's mandate for a regulatory determination on mercury controls for utilities by December 15, 2000.

Current national efforts are focused in a number of areas by EPA offices. Among these are the Mercury Total Maximum Daily Loading (TMDL) pilot project at Devil's Lake, Wisconsin by EPA's Office of Air Quality Planning and Standards (OAQPS). This program seeks to support the states in establishing total maximum daily loadings for specific water bodies which have trouble meeting water quality standards through point source controls. In some cases, TMDLs attempt to quantify atmospheric deposition and the sources responsible for it to implement appropriate control measures and reduce pollutant inputs to a watershed.

U.S. EPA's Office of Research and Development (ORD) has just released its Mercury Research Strategy, which outlines an intra-agency effort to define and address the scientific questions of greatest concern through coordinated research program. The key fate and transport questions the strategy seeks to address are how much methylmercury in fish is contributed by U.S. sources relative to other natural and global sources; and how much and over what time period will levels of methylmercury in fish in the U.S. decrease as the result of reductions made by U.S. sources (Delta Institute).

EPA's Office of Water has developed a Clean Water Action Plan. The Plan identifies nonpoint sources including atmospheric deposition as the most important remaining threat to water quality. Since EPA's existing programs don't focus on control of these nonpoint sources, the action plan emphasizes innovative approaches like consensus building among stakeholders at the local and watershed level for project efforts. Atmospheric deposition is among the prominent nonpoint sources addressed by the plan. A commitment toward inter-agency cooperation on understanding the risks of atmospheric deposition of nitrogen compounds and other toxic pollutants upon water bodies and integrating air deposition into TMDL determinations are also highlighted.

Mercury emissions from coal-fired utilities remain a primary focus of EPA research efforts and potential regulation. EPA's Office of Air Quality Planning and Standards has an ongoing study of speciated mercury emissions from a small subset of coal-fired boiler units to glean additional information on which to make a decision whether to regulate these critical sources.

Lake Erie Specific

Pollution Reduction

Erie County, Department of Environment and Planning: Mercury Pollution Prevention in Health Care Initiative

Erie County, in partnership with the Western New York Healthcare Association (WNYHA) and the Buffalo Sewer Authority (BSA), will solicit participa tion from a minimum of four area hospitals to develop, implement, and measure the success of mercury pollution prevention and reduction strategies tailored to the specific needs of each facility. The proposed work entails: promoting the U.S. EPA/American Hospital Association Memorandum of Understanding; a preliminary assessment of mercury use within each facility; technical expertise and guidance on source identification and reduction strategies; establishment of training and education programs; determination of total mercury reduction achieved; presentation of the four facilities efforts as case studies to remaining Erie County healthcare facilities; and the dissemination of program results and information throughout the Great Lakes basin. Project Period: 10/1/99 to 9/30/01

The P^{3}ERIE Partnership GLNPO Grant (Pennsylvania)

The P^{3}ERIE partnership has successfully worked on practical projects and educational efforts throughout the grant period. P^{3}ERIE's successes have gained media attention and the P^{3}ERIE partners are pleased with project results and positive spin-offs from the project. P^{3}ERIE's partnership efforts have had the following results:

- Approximately 1975 pounds of mercury collected and recycled.
- Approximately 10,000 pounds of pesticides collected and disposed including 350 pounds of DDT, 500 pounds of toxaphene, 275 pounds of chlordane, and 215 pounds of aldrin/dieldrin.
- Collecting mercury from 14 schools and removing approximately 160 varying sized containers of extremely hazardous chemicals including mercuric compounds from 14 school laboratories.
- The largest hospital in northwest Pennsylvania virtually eliminating mercury from its facility and becoming the first mercury free facility in northwest Pennsylvania and perhaps throughout the state.
- Six hospitals beginning or expediting mercury reduction programs.
- International Paper Erie Mill, the largest wastewater discharger to the City of Erie wastewater treatment plant, completed a mercury audit of its facility, removed approximately 180 pounds of elemental mercury, and did not detect any mercury in wastewater streams.
- Publication of two brochures concerning mercury pollution prevention. P^3 ERIE distributed approximately 11,000 copies of the brochure for the general public and 2,900 copies of the brochure for businesses. The brochures are also available on the Internet.
- Sponsoring six workshops on energy efficiency, mercury reduction, and pollution prevention attended by over 280 people from businesses, health care facilities, local government, and educational institutions.
- Initiating an effort for the Pennsylvania Department of Environmental Protection to assist the Pennsylvania Dental Association with the development of hazardous material management guidelines for dental practices.
- Coverage on 24 TV news segments, an appearance on a local TV business show, an appearance on five radio talk shows, and other radio news coverage, newspaper coverage and TV/radio public service announcements.
- Participating in over 20 group outreach efforts to schools, civic organizations, and professional associations and at community events such as Earth Day and Discover Presque Isle Day.

- Receiving two prestigious environmental awards.
- Establishment of a community wide, locally managed pollution prevention partnership.
- Helping foster a positive relationship between the Pennsylvania Department of Environmental Protection and the public, local government, institutions, and businesses.

The management of P^{3}ERIE was transferred from OPPCA to local control in September 1999. Gannon University will be managing the partnership. Gannon's role will be to bridge the partnership from federal and state funding and state management to local management and financial sustainability. On November 16, 1999, P^{3}ERIE held a facilitated meeting to determine if the partnership should seek non-profit status and to determine the partnership's goals and future projects.

Michigan Department of Agriculture: Michigan Mercury Manometer Disposal

Mercury manometer gauges used on dairy farms will be replaced with non-mercury gauges. This will reduce the potential for spilling mercury into the environment. Mercury gauges will also be collected from inactive dairy farms. This work will be done at little or no cost to the farmer. All manometers collected will be stored by the dairy service provider until a Department of Agriculture employee collects them and brings them to the nearest Michigan Clean Sweep Disposal site. Project Period: 10/1/99 to 9/30/00

Michigan Department of Agriculture: Michigan Clean Sweep

This Clean Sweep program shall remove and dispose of old, unwanted, suspended, or canceled pesticides from the agriculture community, industry, and homeowners in Michigan at no fee to the end-user. During annual collection programs, pesticides on the Level I BNS-targeted substances, Level II BNS Toxics, and pesticides of concern for the Lake Michigan, Erie, and Superior LaMP are collected and removed from the environment, demonstrating an ongoing need to provide disposal options to household, private, and commercial participants. Some of the pesticides removed include Dieldrin/Aldrin, Mercury, DDT, Lindane, Chlordane, and others, including numerous "unknown" chemicals returned without labeling or original containers. Project Period: 10/1/99 to 9/30/00

Ontario Ministry of the Environment Projects

1. On January 24, 2000, the Ministry of the Environment announced new provincial emission limits (caps) plus a monitoring and reporting program for the power generating industry in Ontario, including the two facilities (Lambton, Nanticoke) located in the Lake Erie basin. Mandatory reporting of broad range of emissions (including mercury) to the Ministry will be instituted as of May 2000. The lower emission limits (caps) for Nox and SO2 could result in reduced mercury emissions from 1999 levels. For details see http://www.ene.gov.on.ca/envision/news/00600mb.html

2. The Ontario Ministry of the Environment is working to set new emissions performance standards for mercury emissions from the coal-fired power plants including those located in the Lake Erie basin (Lambton, Nanticoke). These Canada-wide standards are being set in conjunction with the other Provinces, the Territories and the Federal Government. These standards will also address and be integrated with reduced emissions in acid gases, smog precursors and particulate matter, as well as considering Canada's committment to Kyoto. For details see http://www.ccme.ca/3e_priorities/3ea_harmonization/3ea2_cws/3ea2.html

3. New (draft) emissions standards have recently been announced (November 1999) by the Ontario Ministry of the Environment that would affect several point sources of mercury in the Lake Erie basin. These Canada-wide standards have been developed in cooperation with the other Provinces, Territories and the Federal government. Once implemented (dates proposed range from 2003 to 2006) these standards will reduce mercury emissions

from the dozen medical waste incinerators and one hazardous waste incinerator located in the basin.

4. As of early 2000, Federal, Provincial and Territorial environment departments are investigating the releases of mercury to the environment from various commercial products and some forms of wastes. A focus on dental amalgam, fluorescent lamps and sewage sludge that is land-applied is expected to result in Canada-wide standards in late 2000. Dental amalgam discharges to sewers, and sludge application to agricultural soils appear to not be causing harm directly, but may be resulting in increased mercury levels in Lake Erie fish and wildlife.

5. The Ontario Ministry of the Environment along with Environment Canada have been working with the Ontario Dental Association to develop a best management practices (BMPs) document for dentists, scheduled for completion in May 2000. Adoption of BMPs by Ontario dentists (use of amalgam traps) can reduce mercury releases to the sewers and hence to Lake Erie. In addition a recent survey of some Ontario hospitals indicated that most have substantially reduced or even eliminated their use of mercury containing materials (sphygnomanometers, fixatives, stains, disinfectants, thermometers) so that their releases to sewers (and incinerators) has been substantially reduced.

Information Based

State University of New York at Buffalo: A Mercury Screening Model for Lake St. Clair

This grant will support the development of a model for the transport and fate of mercury in Lake St. Clair, where mercury is a well-documented problem. This model will simulate mercury sources, water and sediment concentrations, and fish bioaccumulation in Lake St. Clair. It will be used to evaluate trends, direct research needs, and provide guidance to Great Lakes managers. The model that results from this project will eventually be of use throughout the Great Lakes basin. Project Period: 09/1/99 to 2/28/01.

Delta Institute: Creation and Dissemination of Targeted Fish Advisory Materials and a Forum Website in Cooperation with the Lake Erie Binational Public Forum

The goal of this project is to open doors of communication. The first part of the project continues the work of the Lake Erie Binational Public Forum's Environmental Justice Task Group in creating and making available an easy-to-read and culturally sensitive fish advisory brochure. The advisory work will alert at-risk families, both low-income and minority, in the Lake Erie Basin to the dangers of contaminated fish consumption and will also provide positive alternatives for cooking, cleaning and selecting fish in order to decrease risk. Educational materials will be designed to be specific to local areas and communities. An effective dissemination strategy, with on-going outreach efforts, will be key to the success of this project.

Ohio EPA: Mercury Reduction Fact Sheets

The Office of Pollution Prevention will develop two fact sheets that focus on ways to reduce mercury and/or other persistent, bioaccumulative and toxic chemicals in hazardous waste. Fact sheets will be distributed to industry, service companies and the general public in Ohio, and to pollution prevention programs in other Great Lakes states.

Sediments

Gannon University: 3-D Mapping of Contaminants in Presque Isle Bay Sediments

This grant will support the collection of sediment samples in Presque Isle Bay, Pennsylvania. The assessment will include the collection and analysis of sediment cores and surficial samples from 10 locations. Samples will be analyzed for chemical contaminants, biological toxicity, and benthic community structure. Results will be used in making sediment management decisions for the Presque Isle Bay sediments. Project Period: 9/30/99 to 9/29/01.

Basin-wide or Multiple Basins

Pollution Reduction

Michigan Mercury Pollution Prevention Task Force

The Michigan Mercury Pollution Prevention task force, which first convened in August 1994, has been active in many mercury pollution prevention activities throughout Michigan. Significant accomplishments include: 1) a household hazardous waste collection program in 22 counties sponsored by the Michigan Department of Environmental Quality (MDEQ), resulting in the collection of 200 pounds of mercury; 2) distribution of 16,000 copies of the "Merc Concern" brochure throughout Michigan; 3) development of a mercury pollution prevention web page at http://www.deq.state.mi.us/ead/p2sect/mercury; and, 4) distribution of mercury outreach materials to science teachers (Delta Institute).

Detroit Water and Sewerage Department (DWSD) PCB/Mercury Minimization Program

Consistent with its ongoing efforts to work with its customers to pilot pollution prevention programs, the DWSD has undertaken a number of special programs to effectively control mercury in hospitals, dental practices, industrial laundries, laboratories, and households. DWSD has initiated an Atmospheric Deposition Study, made revisions to its Local Limits Ordinance, and established an Education Outreach Program for the general public. The program helps identify current uses of mercury, identify and coordinate and/or encourage proper disposal practices, and evaluate the effectiveness of voluntary activities to date. In one project under this program, the DWSD developed and coordinated a six-month Bulk Mercury Collection Program in cooperation with the Michigan Dental Association, the National Wildlife Federation, the Michigan Department of Environmental Quality, and the U.S. EPA. More than 400 dentists took advantage of the program, contributing about 1,350 pounds of raw mercury.

Great Lakes United, Inc.: Clean Production Project for Basin Communities

Great Lakes United, Inc. (GLU) will continue its support and represent the interests of coalition members, work with member groups to support and develop a Great Lakes "clean car campaign", and promote dioxin and mercury reduction from medical waste disposal. Project Period: 10/1/99 to 9/30/00

U.S. Navy, Great Lakes Naval Station, Naval Dental Research Institute: Mercury Removal from the Dental-Unit Waste Stream

The interagency agreement provides funds to the Naval Dental Research Institute to examine the mercury removal from the dental-unit wastewater stream. Dental mercury is concentrated in fresh-and salt-water food chains, and both mono and dimethylmercury can be produced in bottom sediments by non-enzymatic methylation. Project Period: 9/1/99 to 8/31/00. The project shall:

1) Educate practioners as to the importance of reducing heavy metal contamination from their dental-unit wastewater streams;

2) Provide an electronic resource where practioners can locate sources, materials, supplies, and help in removing heavy metals from the waste stream;
3) Establish a cadre of qualified personnel to speak to dental professionals on the subject of amalgam hazards, collection, and recycling; and
4) Install, test, and evaluate pretreatment systems for both large and small dental treatment facilities.

The Delta Institute: Sector Based Pollution Prevention

Through this project, the Delta Institute will focus on achieving toxics reductions through commitments from private and public sector owned and operated energy production units. There are three separate components to this project. The first is to engage selected industrial sectors in pollution prevention initiatives through increased use of energy efficiency and conservation technologies for boilers. The second is to determine the incentives for and barriers to investments in energy efficiency technologies and conservation practices. The final component involves development of a method to quantify the reduction of persistent bioaccumulative toxics from energy efficiency and conservation technologies and practices. Project Period: 9/1/99 to 9/30/00.

National Wildlife Federation: Local & Sector-based Pollution Prevention in the Binational Strategy

Through this project, the National Wildlife Federation will focus on 1) building on existing efforts to implement pollution prevention, by way of sector-based strategies; and 2) coordinated Environmental Non-Governmental Organization participation in the Binational Toxics Strategy. Project Period: 10/1/99 to 9/30/00.

Ohio EPA Mercury Reduction Strategy

A pollution prevention strategy will be developed to identify, coordinate and prioritize existing and future efforts to reduce mercury in hazardous waste streams, TRI releases and other discharges to the environment. This effort will focus on hazardous waste generators and facilities, TRI releases and others in the Great Lakes basin portion of Ohio. Information from U.S. EPA and other states, including the U.S. EPA Action Plan for Mercury, will be reviewed to develop a strategy that will complement existing efforts. As part of this effort, hazardous waste annual reports, RCRIS, TRI releases and other data from 1997 will be analyzed to determine the sources, generation and management of mercury within the Great Lakes basin portion of Ohio.

Basin-wide or Multiple Basins

Information Based

University of Wisconsin: Mercury Education Program for Schools

This project will focus on developing, adapting, and disseminating high-quality mercury related educational materials for schools. The focus will be on reducing the use of mercury in the school, in students' homes, and in the communities of participating schools throughout the Great Lakes Basin. Project Period: 10/1/99 to 9/30/00.

Indiana University: Deposition of Toxic Organic Compounds to the Great Lakes: The Integrated Atmospheric Deposition Network

This agreement will provide funds for the sixth year of operation and maintenance of the Integrated Atmospheric Deposition Network (IADN) by Indiana University. The IADN is a binational network made up of five sites, one per Great Lake. Twice a month atmospheric samples of rain, vapor, and particles are taken and analyzed for pesticides and other organics.

The results are used to calculate loadings of these substances to the Great Lakes. Project Period: 1/22/99 to 1/22/00

Environment Canada: Integrated Atmospheric Deposition Network Quality Assurance and Quality Control Program

The Great Lakes National Program Office (GLNPO) is collaborating with Environment Canada to implement the binational Integrated Atmospheric Depo sition Network (IADN) as mandated by Annex 15 of the Great Lakes Water Quality Agreement and Section 112(m) of the Clean Air Act. Both agencies reconfirmed their joint support of this binational partnership in the second phase of IADN, which began in 1998 with the signing of a six-year implementation plan by Dave Ullrich and John Mills. The subject cooperative agreement contributes to this binational partnership by matching Canadian support for the implementation of the IADN Quality Assurance and Quality Control (QA/QC) program. This program benefits the public and the Great Lakes States by providing quality controlled data to determine loadings of air toxics to the Great Lakes, for use in identification of sources of air toxics and to target reduction activities at the local level. Project Period: 10/ 1/99 to 9/30/01

U.S. Army Corps of Engineers - Great Lakes and Ohio River Division: Sediment Assessment and Remediation Support

This amendment to the existing interagency agreement augments the existing funds for procuring the support of the U.S. Army Corps of Engineers in the collection and analysis of sediment samples, review of feasibility studies and remediation design plans, and other technical support for sediment assessment and remediation studies. This agreement allows for the integration and coordination of U.S. EPA and USACE activities and provides the U.S. EPA with access to USACE's vast technical experience in dealing with sediments on an "as needed" basis. Project Period: 12/01/98 to 9/30/00.

U.S. Army Corps of Engineers, Great Lakes and Ohio River Division: Contaminated Sediment Management, Amendment, "CDF White Paper"

This agreement will enhance the understanding and management of contaminated sediments in the Great Lakes by producing a report investigating the use, monitoring, and environmental impacts of using Confined Disposal Facilities (CDFs) to manage contaminated sediments. The report shall be a detailed summary of the status of CDFs on the Great Lakes constructed and operated by the Corps, including information about the purpose of the CDFs, the types of designs and operations applied, the state of knowledge on their environmental performance and impacts, and the net environmental effects of CDFs on the Great Lakes. The majority of the report will be extracted from a number of existing reports, white papers and documents developed by and for the Corps and EPA. This project is envisioned to provide a consolidated report summarizing information contained in existing documents into one concise and consistent report. Project Period: 10/01/98 to 9/30/00.

Sustainable Fisheries Foundation: Development of a Guidance Manual to Support the Assessment of Contaminated Sediments in the Great Lakes Basin

This grant will support the development of a guidance manual for assessing and making remediation decisions regarding contaminated sediments. The manual will include a focused review of relevant literature and develop an ecosystem-based framework for assessing and managing contaminated sediments that is consistent with the International Joint Commission guidance on ecosystem management. The manual will be reviewed and published as an EPA-GLNPO document. Project Period: 9/30/99 to 12/31/00.

Ohio Healthy Hospital Pollution Prevention Initiative

Medical waste incinerators are the fourth largest known releasers of mercury to the environment, constituting approximately ten percent of all emissions sources. Hospitals are also responsible for producing one percent of the total municipal solid waste in the entire country, and a variety of hospital equipment is known to contain mercury. To complement the memorandum of understanding signed between U.S. EPA and the American Hospital Association, Ohio is working with the Ohio Hospital Association (OHA) to reduce the generation of hospital waste, including mercury, that hospitals commonly have in thermometers, blood pressure monitors and other equipment. A formal agreement between the two organizations was signed in 1999. As part of the agreement, Ohio EPA and OHA agree to create and implement programs to:

- Virtually eliminate mercury-containing waste from the health care industry's waste stream.
- Reduce the total volume of waste created by the industry.
- Educate health care professionals on pollution prevention activities they can implement.
- Reduce the amount of chemicals used by the industry.
- Monitor the industry's progress in implementing pollution prevention initiatives over time.

Elemental Mercury Collection and Reclamation Program

This program is ongoing in northwest Ohio and collects uncontaminated elemental mercury waste. The program was initiated primarily to prevent children or others from spreading mercury found at improper disposal areas around and contaminating their homes, schools and work areas. See: http:/www.epa.state.oh.us/dist/nwdo/er/mercury.htm

Implementation Efforts Under the Detroit River RAP

1. Contaminated Sediments - The Contaminated Sediments Action Team (COSAT) has been very active in several different ways. COSAT is staffed by a group of volunteers of widely divergent backgrounds and experiences, and all appropriately suited to the tasks ahead. The team has formulated a mission statement that outlines its ambitions, and which reads as follows:

> *The Contaminated Sediments Action Team (COSAT) is a partnership of Detroit River Remedial Action Teams, and local, State, and Federal initiatives to restore, maintain, and enhance beneficial uses of the Detroit River. COSAT will serve as a catalyst to public and stakeholder participation in the sediment remedial process, and will support expeditious and responsible contaminated sediment management.*
>
> Contaminated sediment remedial efforts are arguably one of the newest areas of environmental clean-up. Most previous efforts in pollution elimination have taken place on land or in air, or else have focused on stopping contamination from entering the water for land or air. We now are focusing on areas in our Detroit River that are still repositories of contaminants, which have typically "settled out" downstream of known pollution sources.
>
> COSAT has met several times, and we are actively increasing our knowledge base and coordinating information exchange with numerous key players in the contaminated sediments arena. This includes Canadian researchers, as well as private, academic, state, and federal stakeholders. We goal is to offer a knowledge base to be used to help facilitate sediment remediation efforts.

Project Description - The first project anticipated to be accomplished in the Detroit River will be the removal of approximately 50,000 cubic years of sediment downstream of a former steel mill in the Trenton Channel of the River. The area is known as "Black Lagoon." This project is slated to begin in the fall of 2000. It is being managed by MDEQ and USACE.

Next Steps - COSAT will need to continue to encourage research and innovation technology to maintain and expand their aggregate skill base, and to systematically evaluate and

efficiently implement any ingredient that will benefit sediment removal technology. COSAT strives to develop into a recognized and trusted resource to various Federal, state, and local governments, as well as to private industry, academia, and interested and concerned individuals. COSAT intends to serve as a focal point to other groups with similar interests to maximize an entire concerted effort.

2. Non-point Source Pollution - In 1999, the Detroit River Remedial Action Plan (DRRAP) Non-point Source Action Team was formed to facilitate a reduction of contaminants to the Detroit River. The mission statement of this team is stated as:

> *The goal of the Non-point source pollution team is to stop or reduce further contamination of sediments in the Detroit River from non-point sources by identifying and eliminating those pollution sources.*

This mission statement was adopted to provide a clear and concise agenda that is consistent with the 104 recommendations of the 1996 Detroit River RAP report. Communities are taking a watershed approach to program administration when dealing with non-point source pollution. Urban stormwater, soil erosion spills, remediation sites, and house hold hazardous waste has been identified as the major contributors to non-point source pollution. Federal, State, and Local levels of government have adopted a watershed strategy to combat elusive non-point source pollution. The National Pollutant Discharge Elimination System (NPDES) Phase II regulation is an example of the awareness being brought to water quality issues from stormwater in urban communities. Wayne County and The City of Detroit are in the process of adopting ordinances that protect the quality of stormwater entering the watershed.

Project Outlook - The Non-Point Source Action Team has identified two major tasks, which are both multifaceted and pertinent to the implementation of the RAP recommendations: the introduction of Best Management Practices (BMPs) to potential non-point source pollution contributors; and the assembly of data for a watershed wide Geographic Information System (GIS).

The Non-point source and Pollution Prevention action teams have identified the following industries to facilitate the implementation of BMPs: construction sites; junkyards/ scrapyards; golf courses; and river-front industries

There are a variety of industries located along the Detroit River front, these properties have been identified as sensitive areas and will receive special attention.

The identification of potential release sources is instrumental in the proper management of a watershed. The ability to identify and locate these potential sources will aid in developing a pro-active watershed management system to address non-point source pollution. The protection of critical watershed areas is one of the most effective means of preventing pollution in the Detroit River. Below is a list data that will be used to develop the watershed management system.

- Aboveground Storage Tanks (AST)
- Underground Storage Tanks (UST)
- Spill Prevention Control and Countermeasure Plans (SPCC)
- Toxic Release Inventory (TRI)
- Hazardous Waste Hauler Truck Routes

Next Steps - The Non-Point Source Action Team recognizes areas that overlap with various action teams. Pollution Prevention and Land Use are the two main action teams the Non-Point Source Action Team expects to overlap with most. Dual participation in various projects will be instrumental in successfully implementing RAP recommendations. Sankor'e Marine High School, a downtown river-front high school, is assisting with Detroit River water quality monitoring or wherever they can participate in the remedial action process. Industries along the river front are interested in developing programs, with the assistance of the Detroit River Remedial Action Plan, to assist in non-point source pollution reduction.

3. Pollution Prevention - The 1996 Detroit River RAP report recommended expansion and enhancement of pollution prevention programs. Since that time, progress has been made through both regulatory and voluntary measures. In 1999, the Detroit River RAP Pollution Prevention Action Team was formed to lead and coordinate the implementation of pollution prevention projects at the local level. The team has formulated a mission statement that reads:

To restore and maintain the integrity of the Detroit River ecosystem to a standard that will provide a safe, clean, self-sustaining environment by leading and coordinating pollution prevention projects, as well as supporting other River stakeholders with pollution prevention efforts.

Several regulatory programs have benefited from the integration of pollution prevention procedures. The NPDES industrial storm water permitting program requires permitted facilities to define, implement and monitor controls to prevent storm water contamination. Under this program, each permitted facility develops a site-specific pollution prevention plan for storm water runoff to surface waters.

Consistent with the Great Lakes Water Quality Guidance, Michigan's water quality rules now require development of a pollutant minimization program by NPDES permittees in certain circumstances. When a water quality-based effluent limit (WQBEL) for a toxic substance is established below the level of quantification, the permitted facility must develop and conduct a pollutant minimization program for that substance. As part of NPDES permit renewals, these pollutant minimization programs are being implemented for potential sources of mercury.

Voluntary pollution prevention efforts are advocated under Michigan's Pollution Prevention Strategy. Partnership programs encourage and recognize facilities making public commitments to pollution prevention. Voluntary pollution prevention programs with Detroit River stakeholder participation include:

- Michigan Business Pollution Prevention Partnership,
- Clean Corporate Citizens,
- Green Lights Program,
- Mercury Pollution Prevention in Michigan,
- Michigan Great Printers Project,
- Michigan Automotive Pollution Prevention Project,
- Michigan Turfgrass Environmental Stewardship Program, and
- Retired Engineers Technical Assistance Program (RETAP).

Project Description - The Pollution Prevention Action Team identified six initial projects for implementation. Each of these projects promotes voluntary participation in pollution prevention activities. Several collaborative efforts are also under consideration by the Team:

- Promote pollution prevention outreach and goals within metal finishing sector.
- Provide recommendations for water use/reuse opportunities in non-contact cooling water applications.
- Initiate a pollution prevention program for marinas along the Detroit River.
- Implement region-wide recycling and disposal program for household hazardous waste.
- Expand PCB minimization program.
- Expand hospital mercury reduction project to other medical/clinical facilities.

Next Steps - Opportunities exist to expand voluntary pollution prevention programs within several commercial and industrial sectors, as well as residential areas. The Pollution Prevention Action Team will take a lead role to advance many of these programs, and support other River stakeholders' implementation of others.

The adoption of pollution prevention concepts in regulatory programs could also be further expanded in several areas. Examples include: storm water pollution prevention plan development by indirect/CSO system dischargers and pollution prevention advocacy by enforcement field staff, among others. These efforts are being led by Michigan Dept. of Environmental Quality as part of their regulatory integration plan.

4. Monitoring and Evaluation - The 1996 Detroit RAP report recommends monitoring and evaluation of progress towards RAP goals. In 1999, the Detroit River RAP Monitoring and Evaluation Action Team was formed to lead and coordinate monitoring efforts. This action team is one that cuts across most of the RAP issues, since evaluation of RAP efforts coordinated by the other action teams may be done by programs coordinated by the Monitoring and Evaluation Action Team.

Project Description - Several efforts are underway that complement RAP monitoring goals. MDEQ has ongoing water, fish, and sediment sampling programs. MDEQ, USGS, and the US Army Corps of Engineers are developing a flow model for source water assessment. This model will be a valuable tool for evaluating the utility of monitoring strategies and results. Michigan Department of Community Health (MDCH) and local health departments provide on-going monitoring at beaches throughout the state.

Next Steps - The membership of the action team will be expanded to include individuals with expertise in evaluating biological and sediment issues. Once membership is expanded, a permanent chair will be selected.

The Monitoring and Evaluation Action teams will meet with each of the other action teams to determine the need for monitoring applicable to each team.

Ongoing river monitoring efforts are to be identified by the Team to acknowledge the activity, determine what monitoring needs the project fulfills, determine if the team can add value to the effort, recommend alternatives to enhance the project. The team may also identify specific monitoring projects and sources of funding sought for their implementation.

The team will strive to make available monitoring results available to the public in an understandable format, preferably via the Internet.